



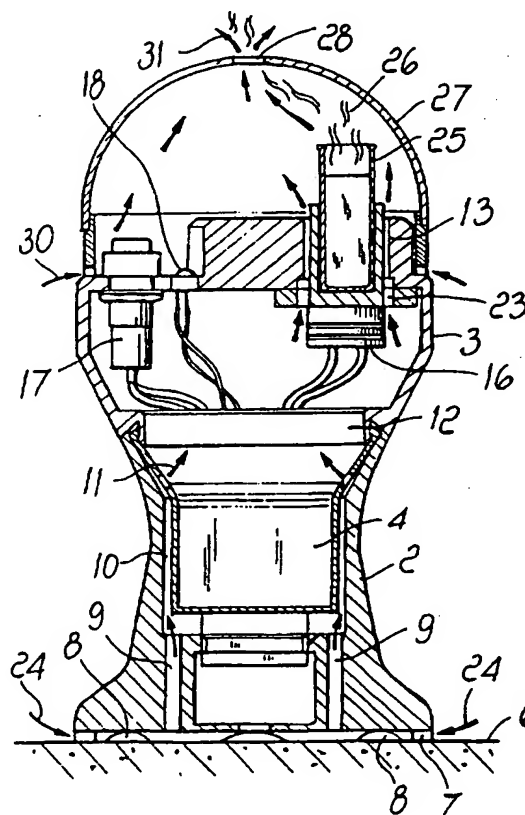
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61L 9/03		(11) International Publication Number: WO 97/39779	
A1		(43) International Publication Date: 30 October 1997 (30.10.97)	
(21) International Application Number: PCT/EP97/01897 (22) International Filing Date: 16 April 1997 (16.04.97) (30) Priority Data: PD96A000097 19 April 1996 (19.04.96) IT (71) Applicants (for all designated States except US): MICHELIN LAUSAROT, Elisa [IT/IT]; Via F.lli Vitrani, 2, I-10090 Villarbasse (IT). D'ARIENZO, Anna, Maria [IT/IT]; Via Gustavo Modena, 24, I-35128 Padova (IT). (72) Inventors; and (75) Inventors/Applicants (for US only): BEVILACQUA, Matteo [IT/IT]; Via Gustavo Modena, 24, I-35128 Padova (IT). ZACCAGNA, Carlo, Alberto [IT/IT]; Via F.lli Vitrani, 2, I-10090 Villarbasse (IT). (74) Agent: MODIANO, Guido; Modiano & Associati, Via Meravigli, 16, I-20123 Milano (IT).		(81) Designated States: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, FI, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	

(54) Title: MULTIPLE ELECTRIC VAPORIZER FOR RESINS

(57) Abstract

A multiple electric vaporizer for vaporizing resins such as incense, propolis and myrrh, the vaporizer comprising a plurality of heated hollow bodies (13, 14, 15), inside which ampoules (25) containing the resins to be vaporized are partially inserted, each hollow body reaching different temperatures according to the type of resin to be vaporized, the heating action being conveniently controlled and timed.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LJ	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

MULTIPLE ELECTRIC VAPORIZER FOR RESINS

Technical Field

The present invention relates to a multiple electric vaporizer for vaporizing resins such as incense, propolis and myrrh.

Background Art

Conventional vaporizers for insecticides or resins are adapted to heat impregnated tablets, liquid containers, or resins in various forms.

These electrically powered vaporizers are particularly simple, but indeed because of their simplicity they are not functional, since their temperature adjustment is very inaccurate.

Temperature is an important variable in achieving correct vaporization without causing carbonization of the product, which generates toxic compounds especially if the product is resin-based.

Resin-derived products or products having a resin-like consistency, such as incense, myrrh and propolis, conventionally have therapeutic characteristics which are enhanced when they are inhaled in vapor form and even more so if these vapors are produced by mixtures of products.

Disclosure of the Invention

A principal aim of the present invention is to provide a multiple electric vaporizer which allows to vaporize a plurality of products simultaneously.

Within the scope of this aim, an object of the present invention is to provide a multiple electric vaporizer in which it is possible to vaporize different products at different temperatures.

Another object of the present invention is to provide an electric vaporizer which is unexpensive and easy to use.

This aim, these objects and others which will become apparent hereinafter are achieved by a multiple electric vaporizer for resins, characterized in that it comprises a supporting structure for a plurality of electrically heated hollow bodies, each whereof is adapted to accommodate an ampoule containing a product to be vaporized, said structure containing electric and electronic power supply and control means, a perforated dome being located above the heating bodies and being adapted to protect them and mix the generated vapors, internal ventilation means being also provided.

Brief Description of the Drawings

Further characteristics and advantages of the present invention will become apparent from the following detailed description of a preferred embodiment thereof, given only by way of non-limitative example and illustrated in the accompanying drawings, wherein:

figure 1 is a perspective view of the electric vaporizer according to the present invention;

figure 2 is a top view of the electric vaporizer of figure 1;

figure 3 is a sectional view of the electric vaporizer;

figure 4 is a partial, sectional view of a different embodiment of said electric vaporizer.

Ways of carrying out the Invention

With reference to the above figures, the electric vaporizer according to the present invention is composed of a structure generally designated by the reference numeral 1

and composed of a footing 2 and a head 3, both being hollow and preferably produced by molding plastics.

A step-down transformer, not shown, is located inside the footing, in a box-like body 4, and is supplied from the
5 mains by means of a power cord 5.

The lower part of the footing 2 is wider and is kept raised from the resting surface 6 by a cylindrical ring 7 having a plurality of arc-shaped openings 8.

Vertical channels 9 are provided inside footing 2 and
10 lead into an annular chamber 10 which surrounds the box-like body 4 containing the transformer.

Chamber 10 is provided, in an upward region, with passages 11 leading into an upper part of the footing 2, where a second box-like body 12 is provided which contains
15 electrical and electronic devices for control and operation.

The footing 2 is coupled to the head 3, with which three hollow heating bodies 13, 14 and 15 made of metal are associated.

An electric resistor 16 is provided in the lower part
20 of each one of said heating bodies, for example the one designated by the reference numeral 13 in figure 3; the resistor can be activated by a switch 17, its operation being visualized by a luminous indicator 18.

Likewise, the hollow heating body 14 is controlled by a
25 switch 19 provided with a visual indicator 20 and the hollow heating body 15 is controlled by a switch 21 provided with a visual indicator 22.

An annular chamber for the flow of air, designated by the reference numeral 23 for the body 13, is provided around
30 each one of said hollow bodies 13, 14 and 15.

An identical chamber is also provided around the hollow bodies 14 and 15.

All the above referenced ducts and chambers allow ambient air to enter from below, in the direction indicated by the arrows 24, and to rise through the various ducts and the various chambers, cooling the transformer and then flowing over the outer part of each hollow body in the direction indicated by the arrows shown in figure 3.

An ampoule 25 containing the resin to be vaporized is inserted in each hollow body.

Heating of the respective hollow body by means of the resistor, for example 16, causes a production of vapors 26 which first gather beneath a protective dome 27 and then flow outside through an upper hole 28.

The dome 27 is preferably made of transparent plastics and has at its lower edge, where it makes contact with the head 3, a plurality of openings 29 which allow air to enter in the direction shown by the arrow 30, the air mixing with the vapors and also flowing out of the hole 28 in the direction shown by the arrows 31.

The resistors of the three hollow heating bodies are controlled so that the temperature reaches a preset value and then remains constant.

The three hollow bodies have different operating temperatures which can in any case be preset or adjusted, depending on the resin to be vaporized.

More particularly, the electric vaporizer according to the present invention is conveniently used to vaporize propolis, incense and myrrh separately or together.

For these products, the operating temperatures are

between 90° and 110° for the hollow body meant to vaporize propolis, between 90° and 120° for the hollow body meant to vaporize incense, and between 90° and 130° for the hollow body meant to vaporize myrrh.

5 Temperature adjustment allows to obtain a vapor mixture which is blended at pleasure.

The electronic control system is also conveniently provided with a timer system, so as to allow to preset the vaporization periods.

10 In order to increase the introduction of the vapors into the environment, it can be convenient to install, as shown in figure 4 in the lowermost part of the footing 2, a fan 32 which causes forced air suction in the direction shown by the arrow 33 and sends it, again with a forced
15 action, through the channels and the circulation chambers which have already been described.

The description of the embodiment clearly shows that the electric vaporizer according to the present invention allows to simultaneously vaporize three different products
20 at different temperatures and, if one wishes, for different times.

It is thus possible to introduce into an enclosed space a chosen amount of products, so as to utilize their therapeutic characteristics in an optimum manner.

25 The electric vaporizer is very simple to use and is protected in its hot parts, so that it is not dangerous.

Obviously, the components used and the shapes of the structure may be different although starting from the same inventive concept.

CLAIMS

1 1. A multiple electric vaporizer for resins,
2 characterized in that it comprises a supporting structure
3 for a plurality of electrically heated hollow bodies, each
4 whereof is adapted to accommodate an ampoule containing a
5 product to be vaporized, said structure containing electric
6 and electronic power supply and control means, a perforated
7 dome being located above the heating bodies and being
8 adapted to protect them and mix the generated vapors.

1 2. A multiple electric vaporizer according to claim
2 1, characterized in that said supporting structure is
3 constituted by a footing and by a head, both being hollow.

1 3. An electric vaporizer according to claim 2,
2 characterized in that a step-down transformer is contained
3 in said footing, in a chamber which is externally ventilated
4 by air streams arriving from the lower part of the footing,
5 which is raised and has a plurality of external accesses.

1 4. An electric vaporizer according to claim 3,
2 characterized in that it comprises a fan contained in said
3 footing.

1 5. An electric vaporizer according to claim 1,
2 characterized in that said hollow bodies are metallic, with
3 cylindrical cavities having a vertical axis, and are heated
4 in a downward region by a resistor which can be activated by
5 means of a switch and is equipped with a thermostat.

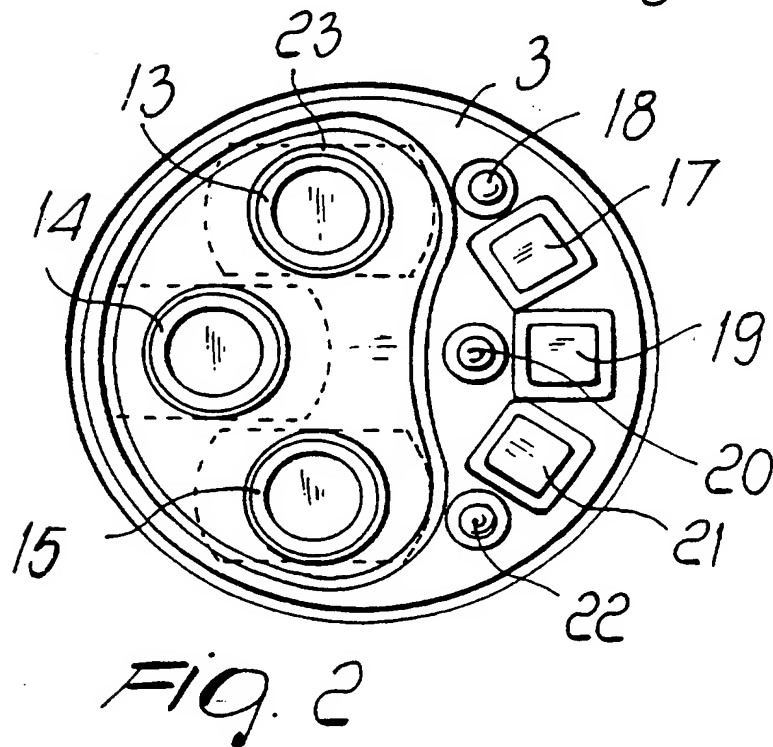
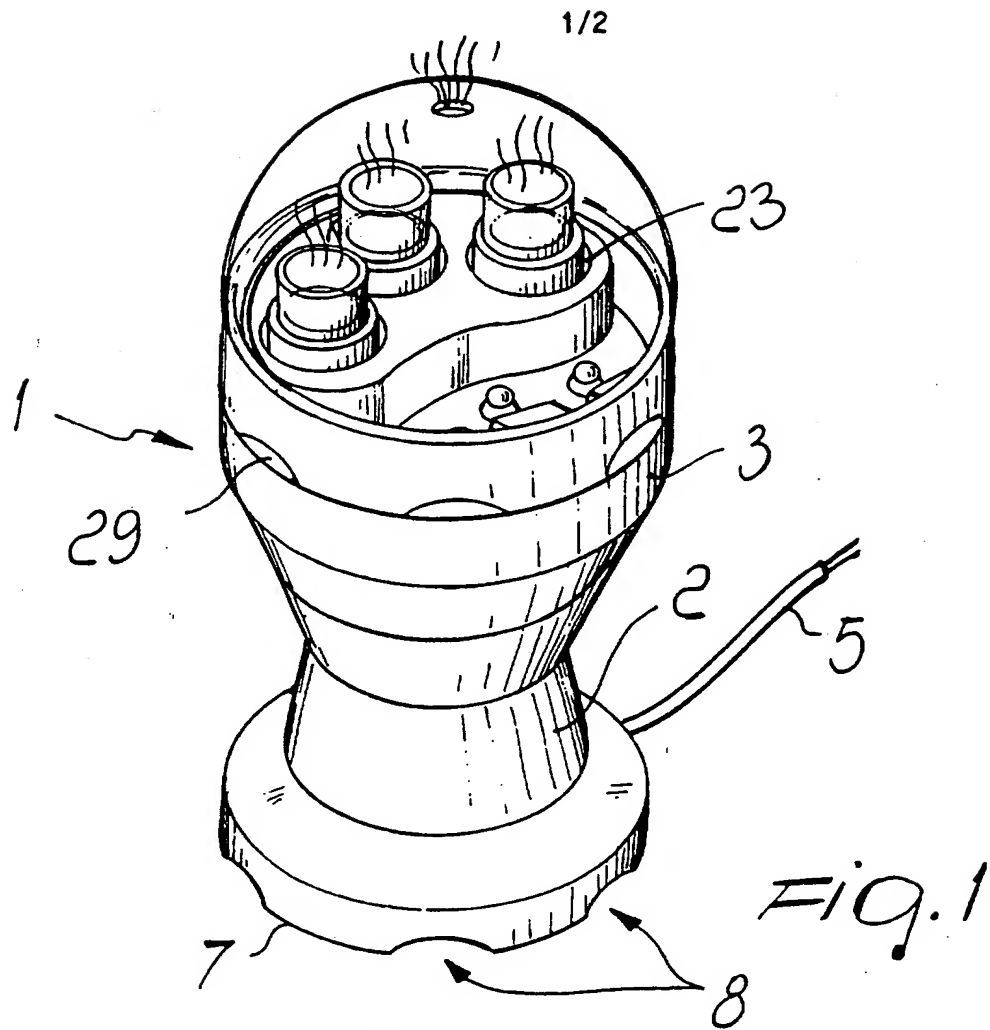
1 6. An electric vaporizer according to claim 1,
2 characterized in that said hollow bodies are fixed to the
3 head of said structure so as to leave a perimetric opening
4 which allows said ventilation air to flow over them

5 externally, producing a rising flow which mixes the released
6 vapors.

1 7. An electric vaporizer according to claim 1,
2 characterized in that said head is closed by a detachable
3 dome for protecting and mixing the vapors, and is provided
4 with lower openings for the inflow of air and with upper
5 holes for the exit of the vapors.

1 8. An electric vaporizer according to claim 1,
2 characterized in that timer means for adjusting the
3 activation and deactivation of the heating resistors are
4 provided.

1 9. An electric vaporizer according to claim 1,
2 characterized in that the temperatures in the three heating
3 bodies are respectively between 90° and 110° Celsius for
4 vaporizing propolis, between 90° and 120° Celsius for
5 vaporizing incense, and between 90° and 130° Celsius for
6 vaporizing myrrh.



2/2

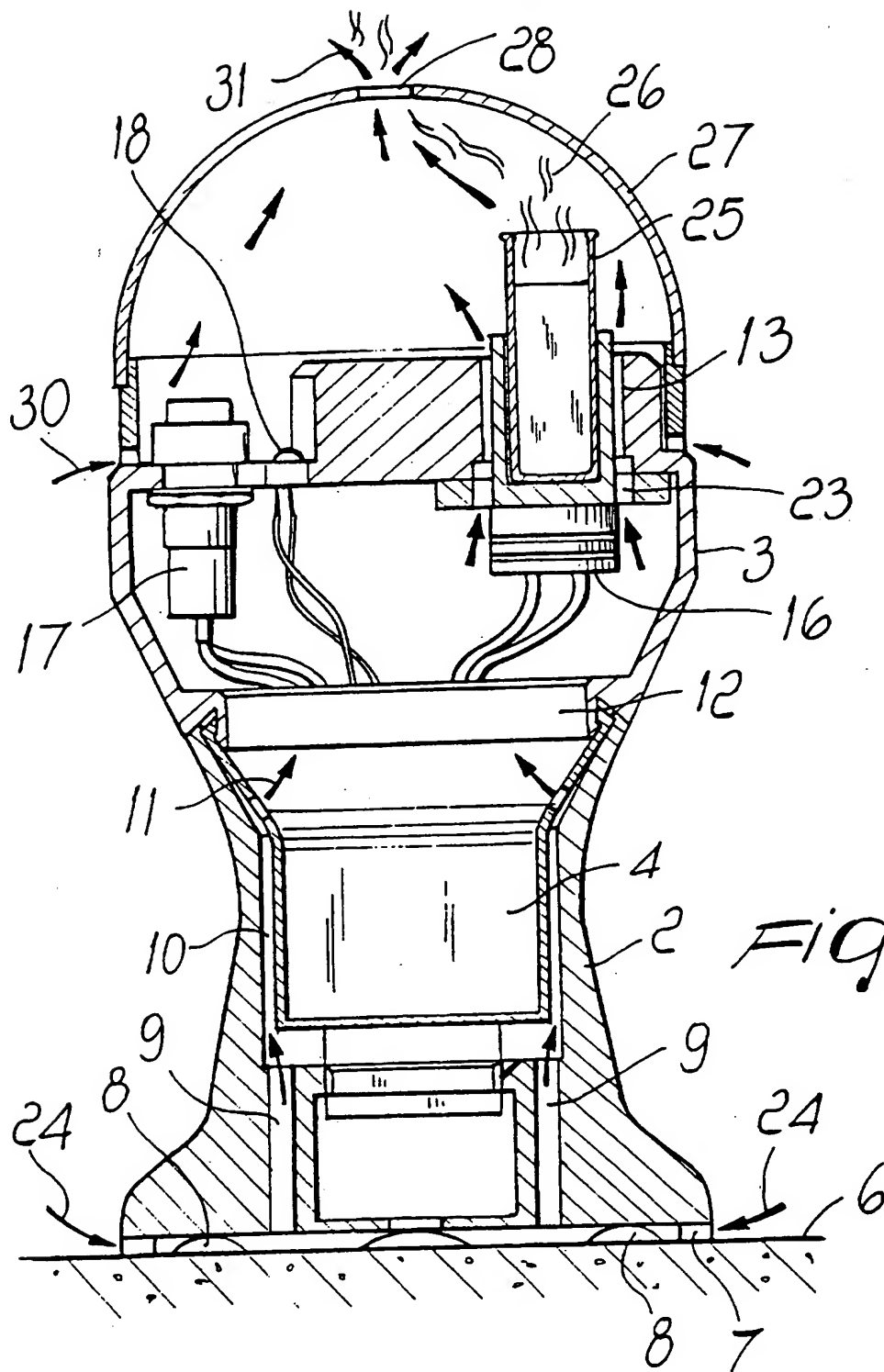


FIG. 3

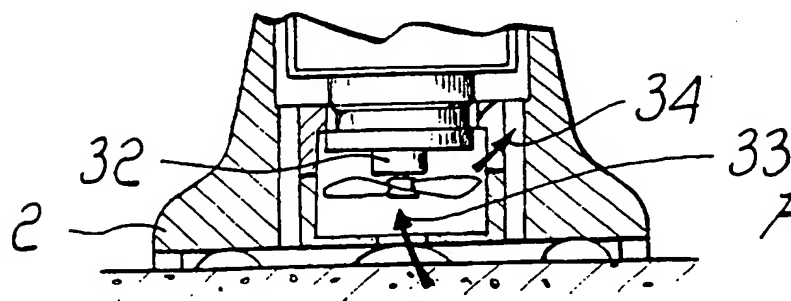


FIG. 4

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 97/01897

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61L9/03

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61L A01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 062 199 A (AIR FRESH UK LTD) 20 May 1981 see claims; figures	1-9
A	FR 2 510 410 A (ALKEKENGE SARL) 4 February 1983 see claims	1-9
A	FR 2 380 002 A (GUDEL WALTER) 8 September 1978 see claims; figures	1
A	US 5 178 839 A (SPECTOR DONALD) 12 January 1993	
A	FR 2 614 535 A (SCP FACT-ANAL.) 4 November 1988	
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- * "A" document defining the general state of the art which is not considered to be of particular relevance
- * "E" earlier document but published on or after the international filing date
- * "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- * "O" document referring to an oral disclosure, use, exhibition or other means
- * "P" document published prior to the international filing date but later than the priority date claimed

- * "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- * "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- * "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * "&" document member of the same patent family

Date of the actual completion of the international search

12 August 1997

Date of mailing of the international search report

21 -08- 1997

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+ 31-70) 340-3016

Authorized officer

ESPINOSA, M

INTERNATIONAL SEARCH REPORT

Int: nal Application No
PCT/EP 97/01897

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 90 03192 A (JOST DIDIER GEORGES) 5 April 1990 -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/01897

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2062199 A	20-05-81	NONE	
FR 2510410 A	04-02-83	NONE	
FR 2380002 A	08-09-78	NONE	
US 5178839 A	12-01-93	NONE	
FR 2614535 A	04-11-88	FR 2592304 A	03-07-87
WO 9003192 A	05-04-90	FR 2636843 A	30-03-90
		AU 4419589 A	18-04-90